

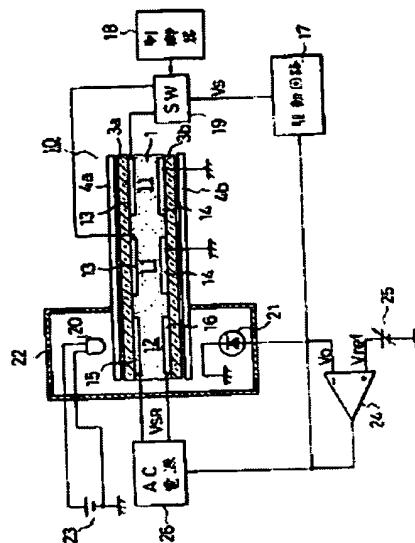
**LIQUID CRYSTAL DISPLAY DEVICE**

**Patent number:** JP59195627  
**Publication date:** 1984-11-06  
**Inventor:** YAMADA HIDETOSHI; YUNOKI YUTAKA; KIMURA KENJI  
**Applicant:** OLYMPUS OPTICAL CO  
**Classification:**  
 - international: G09G3/18; G02F1/133; G09G3/18; G02F1/13; (IPC1-7): G02F1/133; G09G3/18  
 - european:  
**Application number:** JP19830070643 19830421  
**Priority number(s):** JP19830070643 19830421

**Report a data error here****Abstract of JP59195627**

**PURPOSE:** To obtain a good gradation display characteristics over a wide temperature range and to obtain a liquid crystal display device proper to an electronic view finder or the like for a portable apparatus by removing a variation component of incident light amount included in an electric signal and controlling effective voltage to be applied so as to hold the size of the signal at a fixed value.

**CONSTITUTION:** A photodetector 21 outputs a signal  $V_o$  proportional to the intensity of light transmitted through a liquid crystal layer 1. When voltage  $V_{SR}$  applied to transparent electrodes 15, 16 is extremely high for a using temperature,  $V_o > V_{ref}$  is formed and a signal for reducing the  $V_{SR}$  is applied from a comparator 24 to a power supply 26. Consequently, the applied voltage is suppressed and the  $V_{SR}$  is set up so that  $I_t = 50\%$  is formed. When the  $V_{SR}$  is extremely low,  $V_o < V_{ref}$  is formed and a signal for increasing the  $V_{SR}$  is applied to the power supply 26. Thus, the  $V_{SR}$  is controlled to an optimum value in accordance with the using temperature. Simultaneously, voltage  $V_s$  to be applied to a display cell 11 is also controlled so that the most preferable gradation characteristics can be obtained.



Data supplied from the esp@cenet database - Worldwide